CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2005-___

NPDES NO. CA 0084255

MONITORING AND REPORTING PROGRAM
FOR
LINCOLN CENTER ENVIRONMENTAL REMEDIATION TRUST
GROUNDWATER TREATMENT SYSTEM
SAN JOAQUIN COUNTY

This Monitoring and Reporting Program is issued pursuant to California Water Code Sections 13383 and 13267, and pursuant to the Federal Code of Regulations, Title 40, Section 122.48. The Discharger shall not implement any changes to this Program unless and until the Regional Board or Executive Officer issues a revised Monitoring and Reporting Program. Specific sample station locations shall be established under direction of the Regional Board's staff, and a description of the stations shall be attached to this Order.

Section 13267 of the California Water Code states, in part, "*(a) A regional board, in establishing…waste discharge requirements…may investigate the quality of any waters of the state within its region"* and *"(b)(1) In conducting an investigation…, the regional board may require that any person who… discharges… waste… that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires."* This Monitoring and Reporting Program is necessary to assure compliance with Order No. R5-2005-____. The Discharger operates the facility that discharges waste subject to Order No. R5-2005-____.

INFLUENT MONITORING

Samples shall be collected at **Influent Point I-001** located after the last connection before the wastes enter the treatment. Samples are to be representative of the influent for the period sampled. Influent monitoring shall include at least the following:

Constituent[1,4]	Units[5]	Type of Sample	Sampling Frequency
Flow	mgd	Field Measurement	Continuous
Total VOCs[2]	µg/L	Grab	Quarterly
BTEX[3]	µg/L	Grab	Quarterly
Lead (total)	µg/L	Grab	Quarterly
Specific Conductance (EC at 25° C)	µmhos/cm	Field Measurement or Grab	Quarterly

Footnotes Influent Monitoring

1 Analytical methods must be compliant with *Standard Provisions*. A California Certified environmental analytical laboratory must perform all analysis.

2 VOCs= Volatile Organic Compounds and are EPA Priority Pollutants. Report Total VOC as the sum of all volatile organic constituents detected. Report all values of individual volatile organic constituents in accordance with Reporting Protocols provided in the Reporting Schedule and Requirements.

[3] BTEX=Benzene, Toluene, Ethylbenzene and Xylene and are EPA Priority Pollutants. Report BETX as the sum of detected concentrations of benzene, toluene, ethyl benzene and xylene. Report all values of benzene, toluene, ethyl benzene and xylene in accordance with Reporting Protocols provided in the Reporting Schedule and Requirements.

[4] Report all constituents utilizing the naming convention listed.

[5] Constituents are to be reported in these units.

EFFLUENT MONITORING

Effluent samples shall be collected at **D-001** at the point the discharge from the groundwater treatment system is discharged to the storm drain system. Effluent samples shall be representative of the volume and quality of the discharge. Time of collection of samples shall be recorded.

Effluent monitoring shall include at least the following:

Constituent[1,7]	Units[5]	Type of Sample	Sampling Frequency
Flow[6]	mgd	Field Measurement	Continuous
pH	pH units	Field Measurement	Monthly
Specific Conductance (EC at 25° C)	µmhos/cm	Field Measurement	Monthly
Tetrachloroethene (PCE)	µg/L	Grab	Monthly
Trichloroethene (TCE)	µg/L	Grab	Monthly
1,1-Dichloroethene (DCE)	µg/L	Grab	Monthly
Dichloromethane (Methylene Chloride)	µg/L	Grab	Monthly
1,2-Dichloroethane (1,2-DCA)	µg/L	Grab	Monthly
Total VOCs[2]	µg/L	Grab	Monthly
Benzene	µg/L	Grab	Monthly
Toluene	µg/L	Grab	Monthly
Ethylbenzene	µg/L	Grab	Monthly
Xylene	µg/L	Grab	Monthly
BTEX[3]	µg/L	Grab	Monthly
TPH[4]	µg/L	Grab	Monthly
Methyl-tert-butyl ether (MTBE)	µg/L	Grab	Monthly
Arsenic (total recoverable)	µg/L	Grab	Monthly
Copper (total recoverable)	µg/L	Grab	Monthly
Chromium VI (total recoverable)	µg/L	Grab	Monthly
Lead (total recoverable)	µg/L	Grab	Monthly
Mercury (total recoverable) [10]	µg/L	Grab	Monthly
Zinc (total recoverable)	µg/L	Grab	Monthly
Ammonia (as N)	µg/L	Grab	Monthly
Delta-BHC	µg/L	Grab	Quarterly
4,4-DDT	µg/L	Grab	Quarterly
4,4-DDE	µg/L	Grab	Quarterly
4,4- DDD	µg/L	Grab	Quarterly
Chlordane	µg/L	Grab	[9]
Barium (total recoverable)	µg/L	Grab	Quarterly

Constituent[1,7]	Units[5]	Type of Sample	Sampling Frequency
Barium (dissolved)	µg/L	Grab	Quarterly
Iron (total recoverable)	µg/L	Grab	Quarterly
Iron (dissolved)	µg/L	Grab	Quarterly
Manganese (total recoverable)	µg/L	Grab	Quarterly
Manganese (dissolved)	µg/L	Grab	Quarterly
Total Dissolved Solids (TDS)	mg/L	Grab	Quarterly
Chloride	mg/L	Grab	Quarterly
Sulfate	mg/L	Grab	Quarterly
Hardness (as $CaCO_3$)	mg/L	Grab	Quarterly
Acute Toxicity[8]	% survival	Flow-Proportional 24-hr. composite	Annually
Chronic Toxicity	See below	Flow-Proportional 24-hr. composite	Annually
EPA Priority Pollutants		See Priority Pollutant Monitoring Below	Once Per Permit Term

Footnotes Effluent Monitoring

1 Analytical methods must be compliant with *Standard Provisions*. A California Certified environmental analytical laboratory must perform all analysis.

2 VOCs = Volatile Organic Compounds. If any monthly sample contains detectable concentrations of volatile organics compounds the Discharger shall immediately resample and reanalyze the effluent for the detected constituent(s) and shall continue sampling the effluent on a weekly basis until the constituent(s) concentrations are ND.

3 BTEX =Benzene, Toluene, Ethylbenzene and Xylene. Report daily maximum of BETX as the sum of detected concentrations of benzene, toluene, ethyl benzene and xylene.

4 TPH = Total Petroleum Hydrocarbons

5 Constituents are to be reported in these units.

6 Report total flow recorded for the calendar month and average daily flow.

7 Report all constituents utilizing the naming convention listed.

8 All acute toxicity bioassays shall be performed according to EPA-821-R-02-012 *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition,* October 2002 (or latest edition) using *Pimephales promelas* with no pH adjustment, with exceptions granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP). Temperature and pH shall be recorded at the time of bioassay sample collection.

9 Analyze effluent for Chlordane annually in accordance with methodologies specified in the 10 September 2001 (and as amended in December 2001) 13267 letter from the Regional Board.

10 Use clean sample collection techniques and EPA Test Method 1669 or 1631, or later amendment for Mercury.

GROUNDWATER TREATMENT PLANT STARTUP MONITORING

If the groundwater treatment system has a scheduled or unscheduled shutdown that lasts longer than 72 hours or which could result in noncompliance on startup regardless of the downtime, the discharger shall conduct the influent and effluent monitoring requirements upon startup of the treatment system using the following monitoring schedule:

- Immediately upon startup
- Daily for the first three days of operation

- Monthly thereafter in accordance with the influent and effluent monitoring schedules.

RECEIVING WATER MONITORING

Receiving water samples shall be collected at the following sampling stations in Fourteen Mile Slough when water is present or flowing from sources other than the groundwater treatment system:

Station	Description
R-001	100 feet Upstream from Outfall to Fourteen Mile Slough
R-002	200 feet Downstream from Outfall to Fourteen Mile Slough

All receiving water samples shall be collected as grab samples:

Constituent[2,3]	Units[1]	Sampling Frequency
Specific Conductance (EC at 25° C)	µmhos/cm	Monthly
pH	pH Units	Quarterly
Temperature	°F	Quarterly
Dissolved Oxygen	mg/l	Quarterly
Chloride	mg/l	Quarterly
Total Dissolved Solids (TDS)	mg/l	Quarterly
Turbidity	NTU	Quarterly
Hardness (as $CaCO_3$)	mg/l	Quarterly
Barium (dissolved)	µg/L	Quarterly
Iron (total recoverable and dissolved)	µg/L	Quarterly
Manganese (total recoverable and dissolved)	µg/L	Quarterly
Ammonia (as N)	µg/L	Quarterly
Nitrate and Nitrite (as N)	µg/L	Quarterly
Sulfate	mg/L	Quarterly
Chlordane	µg/L	[4]
Priority Pollutants	See Priority Pollutant Monitoring Below	Once per permit term

Footnotes Receiving Water Monitoring

1 Constituents are to be reported in these units.

2 Report all constituents utilizing the naming convention listed.

3 Analytical methods must be compliant with *Standard Provisions*. A California Certified environmental analytical laboratory must perform all analysis.

4 Analyze R-001 for Chlordane quarterly at same time the Discharger samples its effluent for chlordane in accordance with methodologies specified in the 10 September 2001 (and as amended in December 2001) 13267 letter from the Regional Board.

Visual Receiving Water Monitoring and Reporting Requirements

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions. Attention shall be given to the presence of:

a. Floating or suspended matter
b. Discoloration
c. Bottom deposits
d. Aquatic life
e. Visible films, sheens coatings
f. Fungi, slimes, or objectionable growths
g. Potential nuisance conditions

Notes on receiving water conditions shall be summarized in the monitoring reports.

PRIORITY POLLUTANT MONITORING

The State Water Resources Control Board (SWRCB) adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Policy or SIP). The SIP states that the Regional Boards will require periodic monitoring for pollutants for which criteria or objectives apply and for which no effluent limitations have been established. Accordingly, the Regional Board is requiring, as part of this Monitoring and Reporting Program, that the Discharger conduct **effluent monitoring (at D-001) and receiving water monitoring (at R-001)** of priority pollutants **one time no more than 365 days and no less than 180 days prior to expiration of this Order**. The list of priority pollutants and required minimum levels (MLs) (or criterion quantitation limits) is included as **Attachment C**. The Discharger must analyze **pH and hardness** at the same time as priority pollutants.

All analyses shall be performed at a laboratory certified by the California Department of Health Services. The laboratory is required to submit the Minimum Level (ML) and the Method Detection Limit (MDL) with the reported results for each constituent. The MDL should be as close as practicable to the USEPA MDL determined by the procedure found in 40 CFR Part 136. The discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols required in Section 2.4.4, *Policy for Implementation of Toxic Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*, 2000:

1. Sample results greater than or equal to the reported ML shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

2. Sample results less than the reported ML, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The *estimated chemical concentration of the sample shall also be reported.

   For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be

percent accuracy (+ a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

3. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.

THREE SPECIES CHRONIC TOXICITY TESTING

Chronic toxicity monitoring shall be conducted to determine whether the effluent is contributing toxicity to the receiving water. The testing shall be conducted as specified in EPA-821-R-02-013*, Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms,* Fourth Edition, October 2002. Twenty-four hour composite samples shall be representative of the volume and quality of the discharge. Time of collection samples shall be recorded. Dilution and control waters shall be provided by the laboratory or collected from the potable water supply at the facility. The sensitivity of the test organisms to a reference toxicant shall be determined concurrently with each bioassay and reported with the test results. Both the reference toxicant and effluent test must meet all test acceptability criteria as specified in the chronic manual. If the test acceptability criteria are not achieved, then the Discharger must re-sample and re-test within 14 days.

Chronic toxicity monitoring shall include the following:

Species: Pimephales promelas, Ceriodaphnia dubia and Selenastrum capriconicutum
Frequency: Annually
Dilution:

	Dilutions (%)					Controls	
	100	50	25	12.5	6.25	Fourteen-Mile Slough Water	Lab Water
% Effluent	100	50	25	12.5	6.25	0	0
% Dilution Water[1]	0	50	75	87.5	93.75	100	0
% Lab Water[2]	0	0	0	0	0	0	100

[1] Dilution water shall be receiving water from Fourteen Mile Slough taken upstream from the discharge point. The dilution series may be altered upon approval of Regional Board staff.

[2] Lab water shall meet EPA protocol requirements.

REPORTING SCHEDULE AND REQUIREMENTS

Monitoring reports shall be submitted to the Regional Board by the **first day** of the second month following sample collection**.** Semi-annual and annual monitoring results shall be submitted by the **first day of the second month following each calendar semi-annual period, and year,** respectively.

In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly whether the discharge complies with waste discharge requirements. The highest daily maximum for the month, monthly and weekly averages, and medians, and should be determined and recorded.

If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the calculation and reporting of the values required in the discharge monitoring report form. Such increased frequency shall be indicated on the discharge monitoring report form.

By **30 January** of each year, the Discharger shall submit a written report to the Executive Officer containing the following:

a. The names and telephone numbers of persons to contact regarding the plant for emergency and routine situations

b. A statement certifying when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration (Standard Provision C.6).

c. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the groundwater treatment plant as currently constructed and operated, and the dates when these documents were last revised and last reviewed for accuracy.

The Discharger may also be requested to submit an annual report to the Regional Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

All reports submitted in response to this Order shall comply with the signatory requirements of Standard Provision D.6.

The Discharger shall implement the above monitoring program on the first day of the month following effective date of this Order.

The Discharger shall implement the above monitoring program as of the date of this Order.

Ordered by: THOMAS R. PINKOS, Executive Officer

(Date)

Tt/JME